

Application no 10/628,207
Application Dated July 29,2003
Reply to office action of October 17,2006

REMARKS/ARGUMENTS

Claims rejections – 35 USC § 112

Page 2 para 1

Claim 7 the segment means the part of balloon catheter shaft which will have spring/spring like structure.

Claim 19 , It just says that claims above it are being claimed, I saw such last lines ending the claims in a patent application. Now reading the applications, AziziUS2003/0208222, ChiuUS6666880, EuteneuerUS6077273 and RagheebUS6299604, I feel that it may not be required.

Claims rejections – 35 USC § 103

Page 2 & 3

EuteneuerUS6077273

He has described a stent balloon catheter where the balloon segment of catheter has multiple different structures to hold the stent securely on the balloon

Such as it has a balloon (Fig 1-14) which is depressed in centre, cylindrical mounting body (fig 4- 30), spiral mounting body (fig 5- 30), two piece mounting body (fig 7 and 8 - 30a and 30b), inner balloon with valve (fig 11,17 & 18-50,54), sheath (fig 14- 80), two inner balloons (fig 19-50a & 50b) (fig 20 & 21- 54a 54b)

Instantly claimed application (10/628,207):

No such structures to hold the stent securely on balloon. Instead a heatexpansile material on outer surface is used to hold the stent securely on balloon.

Euteneuer (US6077273)

He describes a coil (fig 10), coil with sheath(fig 12- 60 & 62), Column 6 lines 1-5 and 43 - 55. These coils are used to increase mounting area for stent on balloon to secure it.

He further describes coil (fig 15 & 16-106,108) (column 7 lines 14-35) compression of these will enlarge diameter of body to secure stent on balloon.

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The coil is used to increase mounting area for stent to secure it on balloon. The coil here is structurally designed to increase mounting area and has no role in transmitting forward balloon force.

Instantly claimed application (10/628,207):

Here the spring is used for forward force; In the balloon catheter, proximal to balloon the shaft will be missing in a significant length and this part will have a spring(Figure 1A), it will slowly get compressed in length with the force and transmit it forward. This segment will also have spirally running wires(Figure 1B) to act like a spring and absorb the force to transmit it forward.

Note that here spring is structurally designed to be used to absorb force and transmit it forward to the balloon without disturbing the alignment of the balloon catheter.

Thus the structure and purpose of spring in Instantly claimed application (10/628,207), is different from coil of Euteneuer (US6077273).

Chiu (US6666880)

He is using a very complex system to heat the balloon. He wants to heat the balloon to high temperatures while keeping the stent cool so that organic matter of drug and polymer is not damaged. Please note that stent is crimped on balloon and they are in a very close proximity to each other thus it is complex to heat one part and cool other part. He is using expansion restraint (fig 3-30) (column 5 line 26), chill block (fig 5 & 6-40) (column 6 line 9,10), chilled air inlet and outlet (fig 5-46 & 48) (column 6 line 10,11), special notch of chill block (fig 5-42) (column 6 line 13,14), heat nozzle (fig 7-60) (column 6 line 16,17), hot air outlets (fig 7-62) (column 6 line 51), insulating disc (fig 7-50) (column 6 line 30), manifold (fig-8-140) (column 7 line 52), cold air outlets (fig 8-141) (column 7 line 53), insulating disc (fig 8-150) (column 7 line 54), hot air outlets (fig 8-162) (column 7 line 57), hot air nozzle (fig 8-160) (column 7 line 57), stent temperature controller (fig 9-240) (column 7 line 62), grip sheath (fig 9-230) (column 7 line 64), insulating disc (fig 9-250) (column 7 line 64), heat nozzle (fig 9-260) (column 7 line 65). Instantly claimed application (10/628,207):

The concept is simple. Balloon is not required to be heated at high temperature. The

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Balloon's outer surface has a heat expansile material which expands on heat. However there is a problem that it may expand and entrap the stent thus stent has flat outer surface and it is in direct contact with a flat compressive surface so that the balloon material does not come over it to entrap the stent.

Thus high temperature and cooling are not required. Thus the concept is different and so it is structurally different from Chiu (US6666880)

Azizi (US2003/0208222)

It is a complex balloon catheter primarily designed for carotid PTCA. It has built in wire also. To prevent embolisation it uses proximal and distal occlusive balloon with irrigation and treatment balloon i.e. total 3 balloons (fig6, fig 10 A-E, fig 11, fig 16 A-E). It is also uses 4th balloon in external carotid to stabilize (fig 46-50).

Instantly claimed application (10/628,207):

Only difference in balloon(from existing technology) is the heat expansile material and has no resemblance to balloons of Azizi (US2003/0208222)

Azizi (US2003/0208222)

Balloon catheter has a built in DCA system (fig 19-411 & 409) para 0144,0145 & 0146

Instantly claimed application (10/628,207):

No such change from existing technology

Azizi (US2003/0208222)

Balloon catheter has a built in IVUS system (fig18-416,418,419,421) para 0147

Instantly claimed application (10/628,207):

No such change from existing technology

Azizi (US2003/0208222)

Uses metallic braid for catheter rigidity para 0102, 0103, 0104

Instantly claimed application (10/628,207):

No such change from existing technology

Azizi (US2003/0208222)

Balloon has structures to work as perfusion balloon if distal perfusion is required para0154

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Instantly claimed application (10/628,207):

No such change from existing technology

Azizi (US2003/0208222)

Uses plurality of inflation and deflation devices para 0156

Instantly claimed application (10/628,207):

No such change from existing technology

Azizi (US2003/0208222)

Uses solid core wire (fig 32,33 & 34-723) para 0183 and radio-opaque coil (fig 32,33 & 34-731) para 0183, (fig 53-928,926) para 0216

These coils are on the built in guide wire (not on balloon) to help in radio-opacity(visibility) and aid in torque control of wire.

Instantly claimed application (10/628,207):

Here the spring is in shaft of balloon catheter and used for forward force. This is functionally and structurally different from coil mentioned in above paragraph.

Azizi (US2003/0208222)

A removable inflation and deflation device (fig 35-741, 702, 746, 747,749,748,) para 0185. The o-ring 746 decompresses or springs back on rotation of thumb screw 748 and deflates balloon. Here the word spring is used for deflation movement.

Instantly claimed application (10/628,207):

Here the spring is used for forward force. This is functionally and structurally different from spring mentioned in above paragraph.

Azizi (US2003/0208222)

Coil spring (fig 51 & 52-911 & 921) para 0216 are continuation of wire to protect balloon lumen from any sharp edge.

Instantly claimed application (10/628,207):

Here the spring is used for forward force. This is functionally and structurally different from coil-spring mentioned in above paragraph.

Ragheb (US6299604)

He describes a drug eluting stent. Here is using a wide range of drugs (column 3 lines 34-67, column 4 lines 1-10, column 9 lines 27-62, column 10 lines 1-18)

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Instantly claimed application (10/628,207):

A well defined cocktail of 3 drugs (Heparin, IIbIIIa receptor blocker & cytostasis/cytotoxic agent) and well defined time of release (Heparin over 10 days but maximum on day1, IIbIIIa receptor blocker over 10 days maximum on first day & cytostasis/cytotoxic agent 14-45 days)

Ragheb (US6299604)

He uses wide variety of stent platforms (column 5 lines 16-20, column 7 lines 37-54)

Instantly claimed application (10/628,207):

No such change from existing technology

Ragheb (US6299604)

Device intended to be used in various non vascular procedures (column 5 lines 28-34, column 6 lines 42-48)

Instantly claimed application (10/628,207):

For vascular structure only

Ragheb (US6299604)

Device intended to be used in various non- angioplasty vascular procedures as pace maker/ defibrillator lead, heart valve (column 6 lines 58-60)

Instantly claimed application (10/628,207):

No such change from existing technology

Ragheb (US6299604)

Device intends to use a wide range of polymers (column 11 lines 24-67, column 12 lines 1-33)

Instantly claimed application (10/628,207):

No such change from existing technology

Ragheb (US6299604)

Device uses wide variety of drug release mechanism (column 22 lines 19-51)

Instantly claimed application (10/628,207):

No such change from existing technology

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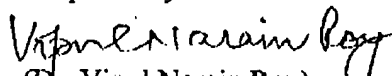
Allowable subject matter

Claim 14 has been modified as desired and written on page 2 of this paper.
I have changed the claims to my knowledge. I am based at long distance and thus allow you to make required changes in claim language.

Conclusion

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted


(Dr. Vipul Narain Roy)

Dated January 11, 2007